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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,746	01/18/2002	Alex Lobovsky	050-00-007	3263

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Honeywell International, Inc.
Law Dept. AB2
P.O. Box 2245
Morristown, NJ 07962-9806

EXAMINER

COLE, ELIZABETH M

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/052,746	Applicant(s) LOBOVSKY ET AL.	
	Examiner Elizabeth M Cole	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Claims 1, 11, 17, 18, 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites that the fiber media comprises at least one fiber having at least one surface projection. Claim one further recites an intra-fiber void within adjacent T-shaped lobes. It is not clear if the T-shaped lobes are the same as the surface projection or if they are in addition to the surface projection. Additionally, since the claim refers to the distance between caps, if the T-shaped lobes are the same as the surface projections, it seems that the claim should require at least two surface projections rather than at least one. Further, with regard to the recitation of the distance between the adjacent caps, it is not clear how this distance is measured, i.e., is it the distance from one end to another end wherein the ends are adjacent each other (the innermost ends), from the outermost ends, from the midpoint of one to the midpoint of the other? The claim is indefinite because the points between which the distance is measured are not defined. These problems are also found in claims 11, 17, 18, and 25. For purposes of the art rejection below, the distance will be assumed to be measured between the two adjacent, innermost end points of the caps.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 1-4, 7-11, 14-22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman et al, U.S. Patent No. 5,057,368 in view of McGregor et al, U.S. Patent No. 5,571,592. Largman discloses a fibrous insulation material comprising a plurality of fibers having a non-circular cross section comprising a plurality of lobes. Largman teaches that such fibers produce superior insulation because of their high loft and reduced tendency to pack. See col. 3, lines 43-57. The fibers may be formed from a variety of polymers, including those claimed. See col. 5, line 40- col. 8, line 22. The fibers of Largman may comprise T-shaped lobes wherein each lob comprises a leg and a cap defining at least one intra-fiber void. Measuring the distance between the adjacent caps from the two innermost end points, the diameter of the void is larger than the distance between the adjacent caps. See figs 1 and 2. Largman differs from the claimed invention because Largman does not disclose incorporating a plurality of expandable microspheres into the fibrous material. McGregor et al teaches that incorporating expandable microspheres into a fibrous insulation material and then expanding the microspheres such that the microspheres are retained in place enhances the insulating properties of the insulation due to the improvement in the loft of the insulation. See abstract. Therefore, it would have been obvious to have incorporated expandable microspheres into the insulation of Largman et al. One of ordinary skill in the art would have been motivated to incorporate the expandable microspheres into the insulation of Largman, motivated by the expectation that this would further enhance the insulation properties of the insulation by improving the loft of the insulation. With regard to the limitation that the expanded microspheres are expanded such that they are

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capable of engaging both the at least one intra-fiber void and the at least one interfiber void wherein the at least one microcell expands to a diameter larger than the distance between the adjacent caps, since McGregor et al teaches that the microspheres should be expanded to a size which fixes them in place, it would have been obvious to have expanded the microspheres so that they were held between and within the voids. Further, it is noted that the claims recite that the microcell is "capable of engaging". The microcells of McGregor would be capable of being expanded to the claimed degree.

3. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman in view of McGregor as applied to claims 1-4, 7-11, 14-22 and 25 above, and further in view of Dalton et al, U.S. Patent No. 5,753,166. Although Largman teaches employing shaped fibers comprising lobes, Largman does not disclose the claimed shape factor. Dalton et al teaches at col. 4, line 60 and col. 6, lines 57-60, that fibers having a shape factor up to 4 are suitable for use in insulation products. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed fibers having shape factors up to 4 in the insulation of Largman. One of ordinary skill in the art would have been motivated to employ fibers having shape factor up to in the insulation of Largman because Dalton teaches that a high shape factor correlates with good shape retention of the fibers. See col. 3, lines 39-40.

4. Claims 5-6, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Largman in view of McGregor as applied to claims above, and further in view of

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Huey, U.S. Patent no. 4,666,485. Largman does not disclose employing mineral fibers as the shaped fibers in the insulating material. Huey teaches that both mineral fibers such as glass fibers and synthetic fibers can be formed into shaped fibers which are suitable for use in insulating materials. See col. 1, lines 10-21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed shaped glass fibers as taught by Huey in the insulation material of Largman. One of ordinary skill in the art would have been motivated to employ the shaped glass fibers because Huey teaches that both mineral and synthetic shaped fibers are suitable for use in insulation products.

5. Applicant's arguments filed 2/9/04 have been fully considered but they are not persuasive. Applicant argues that one of ordinary skill in the art would not have been motivated by the combination of Largman and McGregor to expand the microcells to the degree where its diameter is larger than the distance between the adjacent caps of a lobe. However, since McGregor teaches expanding to hold the microcells in place, it would have been obvious to have expanded the microcells sufficiently to hold them in place. Since the microcells are incorporated into the fibrous insulation to provide loft and fiber separation and since Largman teaches employing the shaped fibers to enhance insulation, it would have been obvious to have expanded the microcells such that they engaged with both the lobes within a fiber as well as between the different fibers so as to provide the most loft and separation within the insulation material. Additionally, the claims recite that the microcell is capable of engaging both the intra-fiber and inter-fiber void.

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6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (571) 272-1478.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (703) 872-9306.

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A handwritten signature in black ink, appearing to read "Elizabeth M. Cole". The signature is fluid and cursive, with the first name "Elizabeth" written in a larger, more prominent script than the last name "Cole".

Elizabeth M. Cole
Primary Examiner
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e.m.c